Bellwork: 4/16/13

Find the x-intercept, y-intercept, vertical asymptote, and horizontal asymptote for the function:

1) $y = \frac{x+1}{x^2-x-6}$

$\frac{0+1}{0^2-0-6} = \frac{1}{-6}$

$(x+2)(x-3)$

$x+2=0 \quad x-3=0$

$x=-2 \quad x=3$

num=0

x-int: $(-1,0)$

x=0

y-int: $(0,-\frac{1}{6})$

den=0

VA: $x=-2;\ x=3$

rules

HA: $y=0$

2) $y = \frac{-2x+6}{x-5}$

$-2x+6=0$

$-2x=-6$

$x=3$

x-int: $(3,0)$

y-int: $(0,-\frac{6}{5})$

VA: $x=5$

HA: $y=-2$

Section 8.3: Graphing Rational Functions

1) $y = \frac{2}{x+1}$

$0=2$

$\frac{2}{0+1} = \frac{2}{1} = 2$

$x+1=0$

$x=-1$ bottom

num=0

x-int: none

x=0

y-int: $(0,2)$

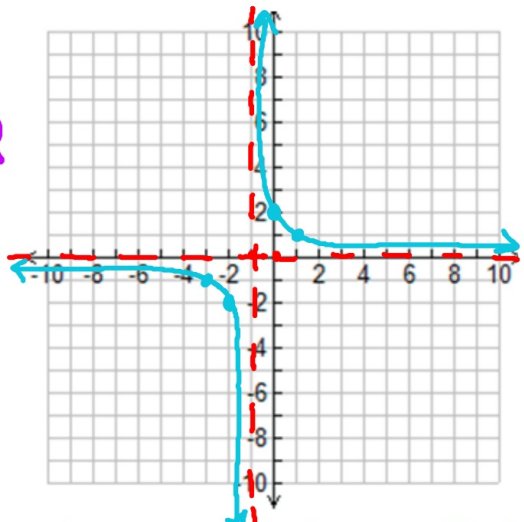
den=0

VA: $x=-1$

rules

HA: $y=0$

dotted lines do first



then use x/y chart to find additional points

x	y
-2	-2
1	1

$\frac{2}{-2+1} = \frac{2}{-1} = -2$

$\frac{2}{1+1} = \frac{2}{2} = 1$

2) $y = \frac{1x+1}{1x}$

$x+1=0$

$x=-1$

$x=0$

$\frac{0+1}{0} = \frac{1}{0}$

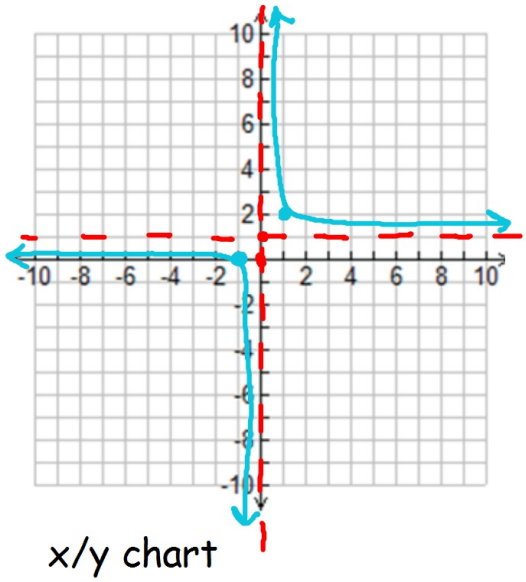
num=0
x-int: (-1, 0)

x=0
y-int: none

den=0
VA: x = 0

rules
HA: y = 1

first!



x/y chart

3) $y = \frac{2x+8}{x-2}$ same

$2x+8=0$

$2x=-8$

$x=-4$

$\frac{2(0)+8}{0-2} = \frac{8}{-2} = -4$

$x-2=0$

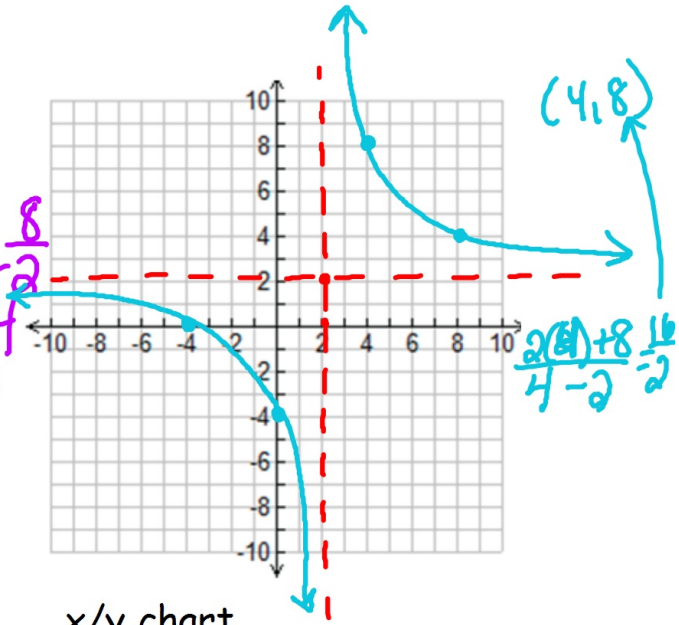
num=0
x-int: (-4, 0)

x=0
y-int: (0, -4)

den=0
VA: x = 2

rules
HA: y = 2

first!



x/y chart

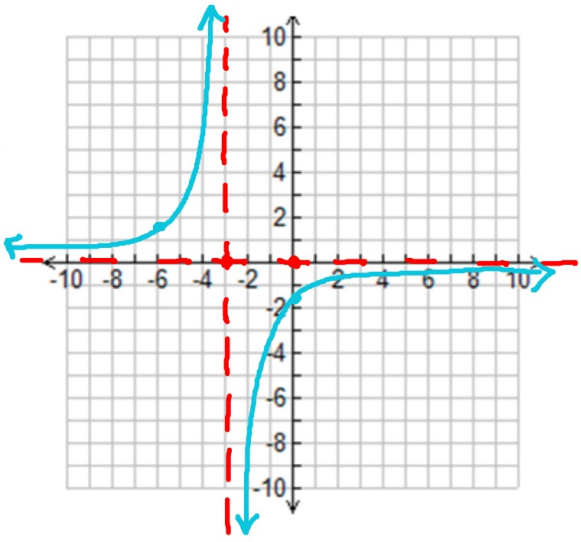
4) $y = \frac{-5}{x+3}$

bottom

$\frac{-5}{0+3} = \frac{-5}{3}$

$-5 = 0$

$x+3=0$



x/y chart:

num=0

x-int: none

x=0

y-int: $(0, \frac{-5}{3})$ -16

den=0

VA: $x = -3$ first!

rules

HA: $y = 0$

Homework: 4/16/13

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